

INSULATING SUBSTRATE BOARDS FOR
SEMICONDUCTOR AND POWER MODULES

ABSTRACT OF THE DISCLOSURE

An insulating substrate board for a semiconductor of the present invention comprises a ceramic substrate board (2) and a metal alloy layer (3) consisting of aluminum formed on one surface portion of the ceramic substrate board (2), wherein the Vickers hardness of the metal alloy layer (3) is not less than 25 and not more than 40. The metal alloy layer (3) includes silicone of not less than 0.2% by weight and not more than 5% by weight. The ceramic substrate board (2) is made of a material selected from a group consisting of alumina, aluminum nitride, and silicone nitride. A power module of the present invention comprises a metal base plate (7), a ceramic substrate board (2), one surface of which is bonded to the metal base plate (7), and the other surface of which is bonded on a semiconductor tip (1), at least one surface portion of the ceramic substrate board (2) having a metal alloy layer (3) consisting of aluminum, wherein the Vickers hardness of the metal alloy layer (3) is not less than 25 and not more than 40.